

A photograph of a pilot in a cockpit, viewed from the side. The pilot is wearing a helmet and looking out the windshield at a cloudy sky. The cockpit instruments and controls are visible in the foreground.

# Out-of-Date Follies

*by Maj. Geoff Field*

At Camp Lejeune, North Carolina, world events in the Balkans made military planners realize that we might have to rapidly place bridge sections across key rivers to ensure mobility. Projects officers from Second Marine Expeditionary Force decided we needed an exercise involving heavy-lift helicopters that would externally transport and place 12,000-pound bridge sections and 9,000-pound bridge boats. As the Ops O of a CH-53E squadron, I saw a terrific opportunity for training.

With planning representatives from the CH-53E squadron, engineer support battalion and landing support battalion, we were all enthusiastic when we first met. We discussed the details of the lift, using a number of reference publications on external-load rigging. Looking at our manual<sup>1</sup>, the helicopter support team (HST) leader politely told us we were using an outdated publication. He produced the

current manual<sup>2</sup>. The squadron had not received this publication. According to the manual, the bridge sections and the boats were authorized for single- and dual-point external lifts, with a recommended airspeed of 70 KIAS.

On the rehearsal day, the weather was below VFR minimums. We decided to postpone the lifts until the next day, which brought clear skies but windy conditions at 17 knots gusting to 24. Both pickup zone and landing zone would be oriented into the wind.

After a short wait in the LZ for the bridge sections and boats to be rigged, we reviewed the preflight weight and power calculations. With a call from HST, all teams were ready to lift. The sequence of lifts was for three boats then 12 bridge sections. We hooked up the first boat with ease and then did the engine and external system checks.

After smooth transition to forward flight, and with the load riding steady using the dual-point



Ted Carlson

external system, we achieved 70 KIAS. We had to fly the boat along the New River and then make a 180-degree turn to set up for final. The drop-off zone was actually a water drop zone approximately 500 meters off the shoreline in water 12 to 15 feet deep.


The first and second lifts were uneventful, and we flew back to the pickup zone for the last boat. The wind appeared to be increasing as the third lift progressed, and it was gusting more than it was steady. On this lift, as the CH-53E with its external load began to decrease airspeed from 70 KIAS and turn toward the drop-off zone, the boat shifted left and right more so than on the previous lifts. We continued with our transition and reduction in airspeed.

While in this turn to final, the boat shifted left 30 degrees, then shifted back to center. As it did, a wind gust made the boat ride bow-high, thereby

reducing the weight sensed by the front airframe hook to less than 200 pounds. This activated the CH-53E's no-load safety feature, designed to prevent either the forward or aft airframe hook from carrying any load independent of the other hook. Consequently, both hooks opened and released the boat. The release was a built-in safety feature; it might have saved the aircraft and aircrew from a dangerous situation with the load still attached to one hook and the aircraft out of center-of-gravity limits. The release of the boat could be seen on our FLIR as it fell to the ground from an altitude of 400 feet AGL.

We radioed the incident back to base and were advised to RTB. The CO was concerned with the integrity of the dual-point system on the aircraft. Members of the squadron avionics shop and civilian tech reps checked the system and found it to be fully functional. We researched the flight-test data for the boat's external air-transportation certification. A test pilot noted that "the boat became unstable and began yawing left and right at 70 KIAS" and that the "Maximum airspeed to be flown with the boat be seventy KIAS." Conversely, the recommended airspeed as published in MCRP 4-11.3 and used by the aircrew was 70 KIAS. Obviously, the published recommended airspeed conflicted with flight-test results and the test pilot's recommendations.

Comparing flight-test data with the airspeeds recommended by the pubs, we found the same inconsistency in three other pieces of equipment. The CH-53E squadron initiated a hazrep, highlighting the inconsistencies and deficiencies in MCRP 4-11.3 with distribution to all CH-53 squadrons, landing support battalions, and engineer support battalions. Two weeks later, we did the bridge lift, using airspeeds recommended from flight-test data, rather than the MCRP 4-11.3.

In retrospect, we paid a high price to discover a piece of misinformation. At least no one was hurt. 

Maj. Field flies with HMH-464.

<sup>1</sup>Fleet Marine Force Reference Publication (FMFRP) 5-31 (Helicopter External Rigging Procedures).

<sup>2</sup>Marine Corps Reference Publication (MCRP) 4-11.3 (Multi-service Helicopter External Sling Load, Volumes I-III).